

THE INVENTION CLAIMED IS

1. A system, comprising:

a plurality of capacitor discharge units, wherein each of said units further comprises: an optical receiver, an electrical storage capacitor, and an electrical bridge type detonator, wherein each said electrical bridge type detonator is operatively coupled to an explosive,

a pulse charging circuit operatively coupled to said plurality of capacitor discharge units and adapted to provide a charging voltage for each respective said electrical storage capacitor; and

one or more optical fibers adapted to provide an operatively coupled optical trigger signal to each said optical receiver and operatively discharge said voltage in each said electrical storage capacitor to thereby simultaneously initiate each said electrical bridge type detonator and each operatively coupled said explosive.

2. The system of claim 1, wherein each said explosive is initiated in less than about 120 ns.

3. The system of claim 1, wherein said electrical bridge type detonator is capable of being initiated with less than 50 mj of energy.

4. The system of claim 3, wherein said electrical bridge type detonator includes an aluminum bridge.

5. The system of claim 1, wherein said one or more optical receivers triggers a switch to discharge said electrical storage capacitors.

6. The system of claim 5, wherein said switch comprises at least one from: a Power Fet, a solid dielectric breakdown switch, a MOS-Controlled Thyristor and an Insulated Gate Bipolar Transistor.

7. The system of claim 1, wherein a charge command to said pulse charging circuit is an optical charge command.

8. A system for use in a wellbore, comprising:  
a plurality of capacitor discharge units, wherein each of said units further comprises: an optical receiver, an electrical storage capacitor, and a chip slapper, wherein each said chip slapper is operatively coupled to a shaped charge,  
a pulse charging circuit operatively coupled to said plurality of capacitor discharge units and adapted to provide a charging voltage for said electrical storage capacitors; and  
a plurality of optical fibers capable of providing an optical trigger signal to each said optical receiver, wherein each said optical receiver upon receiving

said optical trigger signal can operatively discharge said voltage in each said electrical storage capacitor and simultaneously initiate each said chip slapper and each operatively coupled said shaped charge.

9. The system of claim 7, wherein each said shaped charge is initiated in less than about 120 ns.

10. The system of claim 7, wherein said chip slapper is capable of being initiated with less than about 50 mj of energy.

11. The system of claim 7, wherein said chip slapper includes an aluminum bridge.

12. The system of claim 7, wherein said optical receivers triggers a switch to discharge said electrical storage capacitors.

13. The system of claim 1, wherein said switch comprises at least one from: a Power Fet, a solid dielectric breakdown switch, a MOS-Controlled Thyristor and an Insulated Gate Bipolar Transistor. The system of claim 12, wherein said switch is an Insulated Gate Bipolar Transistor.

14. A method for use in a wellbore, comprising:

providing a plurality of capacitor discharge units, wherein each of said units further comprises: a fiber coupled optical receiver, an electrical storage capacitor and an electrical bridge type detonator, wherein each said electrical bridge type detonator is operatively coupled to a shaped charge,

providing a charge voltage for each of said electrical storage capacitors; and

optically triggering said fiber coupled optical receivers to operatively discharge said voltage in each said electrical storage capacitor and simultaneously initiate each respective said electrical bridge type detonator and each operatively coupled said shaped charge.

15. The method of claim 13, wherein each said shaped charge is initiated in less than about 120 ns.

16. The method of claim 13, wherein said electrical bridge type detonator includes a chip slapper capable of being initiated with less than 50 mj of energy.

17. The method of claim 15, wherein said chip slapper includes an aluminum bridge.

18. The method of claim 13, wherein said optical receivers triggers a switch to discharge said electrical storage capacitors.

19. The method of claim 18, wherein said switch comprises at least one from: a Power Fet, a solid dielectric breakdown switch, a MOS-Controlled Thyristor and an Insulated Gate Bipolar Transistor.